J. Waldburg

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THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. IV. **FOR MAY, 1844.** **No. 5.**

Communicated for the Southern Agriculturist.

INTRODUCTION OF BLACK AND GREEN SEED COTTON INTO SOUTH-CAROLINA.

John's Island, May 22, 1843.

Dear Sir,—I have received your favor dated the 3rd of April last, and proceed now to reply to your inquiries, as soon as circumstances have permitted me to do so. I will give you a narrative of such facts as came within my own knowledge, and shall leave you to draw your own conclusions from data given, in other cases, where I cannot speak possitively as to the fact.

It is out of my power to say possitively, who the individual was, *that first* introduced the black-seed cotton, or the green-seed cotton into South-Carolina, but I know, *that both those kinds of cotton* were cultivated on my father's plantation at Burden's Island, for domestic manufacture, as early as the year 1778 or 1779, and I do not know, that he did not cultivate them earlier than those year's, and I cannot say, that he was not the one to introduce them into the State.

In 1777, my father retired from the City of Charleston with his family to his plantation on Burden's Island—the non-importation act had been passed, and domestic manufactures had been recommended as a substitute for English goods, as early as 1775. My father and his family partly, and his negroes entirely, were soon after he removed to the country, clad in homespuns woven in his own loom, of materials taken from the backs of his sheep, and the product of his cotton patches planted for domestic purposes.—Having refused the offered protection from the enemy, and been consequently driven with his family and people, from his plantation, he built earth cellars in a retired thick wood on the main land,

about two miles distant, where his family remained several months, until he procured a more comfortable residence for them, at the house of an old physician and his lady in the neighborhood; there they remained while he was at the American camp; but his negroes continued to dwell in the swamp until the enemy was driven out of the country. From that sequestered spot, the faithful part of his people who were not carried off by the enemy, resorted in the day time in boats to the plantation, to cultivate the crop, having sentinels placed on the look-out to give notice of the approach of the enemy, who repeatedly plundered the plantation. Although a small boy at the time, I remember well, assisting the servants in their task of separating the cotton from the seed, while at the plantation; which at first was done entirely with the fingers—and I remember distinctly the preference given to the black seed, over the green seed cotton. But my father soon constructed a roller cotton-gin, with pieces of iron, gun-barrels burnished, and fixed on wooden rollers, with wooden screws to secure them—and wooden cranks to turn in the manner of the stall corn mills. With this simple gin, and one man to turn, and another to feed, he soon ginned out enough cotton for his domestic purposes. I am under the impression, this was the first cotton roller gin used in South-Carolina, and that the present roller foot-gin is an improvement of it. This gin was made on this Island, and probably generally elsewhere.

After the enemy was driven out of the country, and peace proclaimed, my father returned to the cultivation of indigo as a crop, and discontinued raising cotton. He died in 1785. My mother employed overseers and planted two crops of indigo in 1786 and 1787—which were lost from the mis-management or neglect of the overseer. After the second year, she discharged the overseer, and took the management of the crop herself in 1788, she collected heaps of compost and manured her fields; she procured from some merchant in Charleston, a few bushels of black seed cotton, planted a part of the crop in cotton, but much the largest part in corn. Her corn crop was abundant, and the cotton grew about six feet high, but did not begin to blossom until about the latter part of September or October; I am under the impression not a pod ripened. I have since assertained from experiments made by myself, that my mother planted the Bourbon black-seed cotton, which long after continued

to command the highest price in the English market, but was too late in ripening for this climate. This was the first attempt that I know of, to cultivate the black-seed cotton in South-Carolina as a crop. My father's creditors at this time became impatient to be paid the balance of the money due them, sold all our negroes, and prevented my mother from pursuing the experiments with other cotton seed. She was a lady of sound, discriminating judgment, persevering industry and firmness; and would, I am convinced, have continued the cultivation of black-seed cotton, with advantage to the creditors, and the estate, if she had been permitted to retain the means of so doing.

In 1790, or 1791, I saw at the plantation of our next neighbor, Mr. Jonathan Fickling, about the eighth of an acre of black-seed cotton, which the proprietor informed me he planted to make nets, and fishing lines, and thread. From the growth, fruitfulness, and early maturity of the plants, then bent down with the load of pods, I judge that cotton to have been the same kind of common black-seed cotton, afterwards generally cultivated on the islands and sea-coasts of South-Carolina and Georgia. And very probably it was the same kind that my father and others cultivated during the revolutionary war, for domestic use. I suppose that many persons after the revolutionary war, in the upper country, continued to cultivate small patches of the green-seed cotton; and many other persons besides Mr. Fickling in the low country, continued to raise small portions of the black-seed cotton also for domestic use. And in this way only, can I account for the sudden spread in this State, of the cultivation of both kinds of cotton, in a very few years after it was tried successfully as a crop in Georgia.

About the year 1790, Mr. James King, a young Englishmen came to Charleston with an adventure of goods, sold them off, went to Georgia, invested his money in negroes, and planted a crop of rice with success in 1791. About this time, Mr. Lavett and others in Georgia, were cultivating cotton with success. Mr. King removed to the Ogeechee river, and planted a crop of cotton in 1792, which failed mostly. He then sold out, removed to Burden's Island, purchased other negroes, and planted his first crop of cotton there in 1793, on shares with his mother-in-law, my mother above mentioned. The cotton produced well, and I sold it for them at

12 and 13 pence per lb. to Messrs. Teasdale & Kiddell, the only purchasers of cotton in Charleston at that time. I am under the impression, this was the first successful crop of black-seed cotton produced in South-Carolina. The next year 1794, Mr. King planted cotton again, but his crop failed, and he abandoned the cultivation of cotton for two years 1795 and 1796, for the culture of rice, which also failed, and he could not be persuaded, although I urged him to return to the culture of cotton, until 1797. I also urged the late Mr. James Legare of this Island to try the culture of cotton in 1796, as indigo had failed in price, to be an article of advantageous culture, and gave him all the information I possessed on the subject. A neighbor of his had brought 10 or 12 bushels of black-seed from Georgia, but was fearful to risk the culture, and offered the seed to him, he accepted it, and planted 40 acres, which produced an abundant crop, this was of the short staple Orleans black-seed, it matured very early, and resembled *in growth*, the common up-country green-seed cotton. This I am under the impression, was the second successful crop of black-seed cotton cultivated in South-Carolina, the next year many planted it, and it has continued to increase ever since.

Dr. Ramsay in his history of South-Carolina, says, "before 1795 the whole quantity of cotton shipped from South-Carolina was inconsiderable. That it amounted that year to £1,109,653." I am under the impression, all the long staple cotton exported that year from Charleston, was produced in Georgia, and transmitted to Charleston for export.

I did not commence the cultivation of cotton myself, until 1798, with black seed brought from Georgia by Mr. James King, and at that time, said to have been originally introduced there by Mr. Lavett. About the year 1804 or 1805, I raised from selected seed, a pocket of fine cotton, which the merchant through whom it was shipped, informed me that one of the most distingushed spinners told him, was so superior to any cotton he had ever seen, that he would give 25 cts. per lb. for it more than any other cottons at any price. The shipping house shortly after failed, and I never received any account sales of the pocket. This I believe was the first attempt in this State to improve the fineness of the black-seed cotton. This seed was lost by some means not now recollected.

In 1823, I sent a pocket of cotton to Manchester. After examining it, my correspondent wrote thus,—"And we have little doubt that such cotton will always command from three to four times the price of ordinary Sea-islands."

For some years previously to 1823, I was engaged in improving the quality of my cotton, and succeeded in doing so to a considerable extent, generally getting an advance in price upon the previous year. In 1823, I raised the sample alluded to above, the seed of which was planted in 1824 and 1825, and in 1826, I raised my first full crop of superfine cotton, (about 60 bags,) which I sold at one hundred and ten cents per lb.; in 1827, (a bad season,) I produced a less quantity, and sold the crop at $1 25 per lb. From statements derived from the three *most considerable factor's houses* in Charleston, the average price of common Sea-island cotton during the eight years from 1821 to 1829, (excluding the speculative year of 1825,) was about 24 cts. Those denominated at that time "fine," embracing the crops of Messrs. Seabrook, Mathews, Coffin, Shoolbred, and Vanderhorst, varied from 35 to 60 cents.

My correspondent in Manchester, wrote me on 21st of August, 1828, thus—"we could scarcely have anticipated when first our correspondence commenced, that your superfine cotton would ever have commanded such an advance upon the average price of fine cotton, as it did last year. We were happy to find you so well rewarded for the perseverance and skill you have displayed in the business, and although at such prices, we can seldom find it our interest to be purchasers, still we derive benefit from your success by the attempts it excites in others to follow your example. Fine cotton, we have little doubt, will be more generally cultivated, and the consumption of fine yarn increased by the superior quality of yarn which a superior raw material will enable us to produce. As to the price of superfine cotton, that will soon adjust itself to the relative states of supply and demand Cotton at 140 cts. per lb. cannot in this country be profitably employed to spin anything under No. 240, and the demand for yarn above that is so trifling, that 8 or 10 bags per annum, will spin all that is used. With these notions and above twelve months stock of superfine cotton, we do not propose during the ensuing season, to compete at the current rates of last year—it being our confident expectation to see such cotton

gradually lower in value till it settles down at from 20 to 30 per cent. above the price of such cottons as ———. When an approximation to such a price takes place, we shall once more be ambitious to renew our business with you."

I remain, very respectfully, your ob't, serv't.

KINSEY BURDEN.

P. S.—I give this extract to you as it stands in the letter, that the relative value of the Cottons then considered fine, and what I produced may be understood; but it may be best, perhaps, if you have occasion to copy this extract in any publication you may make, to leave the name blank. You will be pleased to acknowledge the receipt of this letter, that I may know whether it has been received by you.

To WHITEMARLH B. SEABROOK, Esq.
Edisto Island, So. Caro.

For the Southern Agriculturist.

RUFFIN'S REPORT OF HIS AGRICULTURAL SURVEY OF SOUTH-CAROLINA.

Some persons have expressed themselves disappointed in this Report, because very little notice has been taken of any other mineral substances found in South-Carolina, except the Marl and Lime. Some also complain that no notice has been taken of Insects, Birds and Quadrupeds, found within our precincts. As agriculturists we think these complaints unfounded, and beg leave to remind our readers, that Mr. R. was appointed to make an *Agricultural and Geological* Survey of the State. That he had only nine months for effecting these objects, and the Report before us evince the great zeal, talent and devotion, with which that survey was commenced, prosecuted, effected and reported between the dates of his arrival from Virginia, and the session of the Legislature. Wherever Agriculture could be promoted by Geology, he did more than could have been expected. We do not deny that the wealth and power of the State, may be advanced by discoveries of its mineral productions hitherto unknown; but insist that he has discovered more of what was the most important to its agricul-

tural interests, the great interests of South-Carolina, in the vast beds of rich marl, (mostly unknown,) than could possibly been expected of him. He also excited in others, a spirit to search and inquire, and use this and other manures, so abundantly supplied by a bountiful Providence; and to prosecute the use of those which can no longer be considered experiments.

We do not doubt, that certain birds and insects affect the interests of planters to an extent hitherto not suspected—some beneficially, others injuriously; but find that Mr. Ruffin has considered this subject in pages 76, 77, 78, 79, 80, 81, especially as to insects —blended with those practical and highly important observations, on the rotation of crops, and the necessary rest of the soil. Highly as we appreciate the whole Report, we consider that part of it the most important, where beginning at page 72, he gives "a cursory view of the state of Agriculture in the lower and middle parts of South-Carolina, and of the changes and improvements therein most required." His views are in all respects highly important to every inhabitant of the State, and in some parts new, and therefore more interesting to us. They are the recommendations of an experienced Southern Planter—extensively and minutely informed on every subject connected with Agriculture, and by him judiciously applied to the peculiarities of South-Carolina. They are important to every part of the State, and of the Southern States.

He describes the various kinds, appearances and localities of Marl, as seen in his Survey, and heard of from others. A knowledge of these deposites, and even of the appearances of Marl, being generally unknown throughout the State, he describes them minutely and distinguishes them scientifically. The circular basins or sinks in the surface of the earth, being a peculiar feature in these limestone regions, he with reason accounts for them, by the filtration or passage of water through the pores of the earth, into caverns of the limestone, and into veins of water passing through those caverns, and through various fissures in their formation. A singular junction of such sinks, much deeper than usual, is said to have given the name of Four Holes to that extensive portion of Colleton District, extending from Edisto River, northeastwardly, to Orangeburg District, near the waters of Congaree River. These may be seen near Mr. Isaac Bradwell's on the State Road, they

are so near together, so deep, and so precipitous on their edges as to be dangerous, and the neighbors have enclosed them with a fence, to protect themselves, their horses and cattle from falling in. Water is always to be seen at the bottom of one or more, and sometimes of all these sinks, and the neighbors believe them unfathomable.

It is in allusion chiefly to this region of country, including all the leads to the Cypress, that Mr. Ruffin makes his very judicious remarks commencing at page 69. This region extends from the Edisto River, below Giveham's Ferry, over the Santee Canal to the Santee River, and probably much farther east and west, and certainly up to the village of Orangeburg. He believes that these water-courses flow over a bed of Marl; and that this compact mass, not permeable to water, generally keeps up the immense inland swamps, which render the neighboring country sickly to the inhabitants, and useless to agriculture. By a judicious system of draining, this whole country might become one of the most productive and valuable in the United States, and now it is one of the poorest. We will suggest one such excavation, which may be effected by private enterprise, or by the union of two or three persons. It is well known that the navigation of Ashley River is obstructed somewhere near Bacon's Bridge, by a mass of Marl called, we think the Rocks; and below this it is open to the ocean. Near where the Cypress enters into the Ashley, is a large tract of land once owned by Mr. Blake, but now held by Mr. Henry A. Middleton. Through the highland part of this tract, we are told that there is a succession of ponds near each other, extending over to the Ashley, below the Rocks. A canal between Cypress and Ashley may be cut through these ponds with more ease than the ditching on a rice plantation. By it, all the flat, wet, and pestilential Cypress swamp, as far as the embankment under the Railroad, would be drained, and converted into the most valuable plantations in the State; for the owners, residing in the adjoining pine-lands, could daily direct their planting interests. The woodland on both sides of the canal would become extremely valuable, by affording supplies to the Charleston market, of light-wood, timber and fire-wood; and the sale of the Marl thrown up in the excavation would be productive; for in Europe, where it is wagoned twenty miles, this alone would

be a fortune. A toll also might be obtained for passing through the canal, or the private right of exclusion be enforced.

We continue our extracts from Mr. Ruffin's Report, on the "*General Characters, Extent and Distribution of the Calcareous Formations of lower South-Carolina*;" and shall in time, lay the principal part before our readers :—

"Besides the great body, there are three varieties which should be noted. At Col. James Ferguson's plantation on Cooper, and also a few miles distant, at a hill in the Monks' Corner Road near Broughton's swamp, there are exposures of a different and peculiar kind of marl. The stratum was exposed in the road by the washing of a gully, and at Col. Ferguson's by the recent digging of a canal, as well as formerly on another part of the same plantation by the digging of a well, which was sunk to the depth of eighteen feet through the marl, without reaching its bottom. It is a grayish clay, not tough or adhesive, but which crumbles easily, and the lumps are entirely reduced soon after being exposed to the air. It has no signs or fossils, and no resemblance to any other known marl of this country, and agrees more nearly with the European descriptions of marl, and with marl proper, as defined in the begining of this report. In that at Col. Ferguson's, there are many nodules, enclosed in the general mass, of pure white, and though firm, yet of soft and fine chalky texture and apparent qualities, and which I found to be composed almost entirely of carbonate of lime.

This marl, though so very different in appearance, I infer was derived from the ordinary kind, by a part being washed off by the rush of waters which acted to denude the whole body of marl, and was suspended in that manner, mixed with fine clay, and then again deposited.

Another peculiar marl is seen at Mr. R. Mazyck's plantation near the Santee Canal. This differs from the ordinary kind in having its upper part, for the depth of above two or two and a half feet, intermixed with a large and vaulable marl of green sand. Below this, the green sand nearly disappears, and the marl is white and very hard, or changes to marl stone.

A third, but slighter variation from the marl characters, is seen at the Grove, Dr. Edmund Ravenel's plantation, three miles from the river, and fourteen only from Charleston, being the most south-eastern, or lowest exposure yet known on or near the Cooper River, and above water, of the Great Carolinian bed. At this place the marl is granular, and softer than the great body; and there is also a difference in the prevailing fossils. A very similar marl in texture I afterwards observed in one place only, Gen. Erwin's mill, Barnwell, near the Savannah River.

Before this year, not one trial of the marl had ever been made on or near the Ashley River, nor on any one of the Cooper River

plantations.* On plantations on tributary waters of this river, there had been two individuals who had marled, and with satisfactory results. These were Dr. Edmund Ravenel and Mr. Frederick Porcher, who each had some years ago, applied marl to something more than twenty acres."

Marls of the Santee River and its Branches.—The lowest part of this river where the marl of the Great Carolinian bed is first seen, is a mile below Echaw Creek, which empties from the southern side into the Santee about five miles above where the river divides into two passages (forming the North and South Santees,) to the ocean. The marl is also seen in the high land on the northern side, back of the swamp which there borders the river, somewhat about the lowest locality on the opposite side, and along the lands on Cedar Creek, which empties just above, and four or five miles below Lenud's Ferry. Thence, it is seen on most or all the lands up the river to Baggy Branch, which enters the Wittee Lake, (one of the passages of the Santee,) about six miles above the ferry.—No exposure is known above this limit in Williamsburgh district.

Higher up the river, in the southern and lower part of Sumter, the marl shows in many places in and along the borders of Potato Creek, or has been formerly reached and excavated for lime-burning. This creek empties into the Santee, nearly opposite the northern end of the Santee Canal. The marl on and near Potato Creek is exposed to view only about three feet high above the water. Higher up the river, there is no known exposure of the body of marl in Sumter, its depression being too great. Across Scott's Lake, below Wright's Bluff, (the ancient bed of the Santee,) only, the surface of the marl may be traced quite across. I found it there nowhere less than four feet below low water of the river, and varying from that to eight feet. The marl at this place was traced across the lake, which is about one hundred and twenty yards wide and was felt some eighty yards in the other direction, or that of the general course of the river. It seemed to be most elevated in the middle, or as a gently rounded ridge, of which the sides were depressed until lost to observation under the mud which is rapidly filling the lake.

On the southern and western side of the river, the marl is seen from Warren's, below Echaw, (above mentioned) on every plantation to Dr. John S. Palmer's plantation above Lenud's Ferry, and still higher at sundry different places along the river, as high as the lower part of Mattasee Lake. This whole distance on the map is

* It was not until long after my observations and careful inquiries had been made in this neighborhood, and written as above, that I learned when far distant, and by an accidental communication, contrary to all previous information, that Dr. Philip Prioleau, a former resident, had some years ago made an unsatisfactory experiment with marl at Sportman's Retreat. The entire ignorance in reference to this fact, among the near neighbors, presents in even a stronger pont of view the general and total disregard to this mode of improvement.

about twenty-two miles in a straight line. Of all these localities, I examined personally only the extensive exposures on the lands of Dr. John S. Palmer and Col. Samuel J. Palmer, below in Charleston District, and Dr. Robert Gourdin's, Georgetown, and also, the highest known exposure, (on Glass' land) in Williamsburgh, and at and above Scott's Lake. For the other localities of actual exposures, I relied on the information of the above named gentlemen, (and on specimens furnished by them,) who were all among the most extensive marlers of the few in the State, and who were well acquainted with the marls and the localities of their neighborhood. From the highest exposure named, at Mattasee Lake, the marl sinks to a much lower level, and is no more seen along the river, until reaching Greenland swamp, where it is again invisible, but still lying loose. This interval is about fifteen miles in a direct line. On the two branches of Rock's Creek, I again saw the marl and in abundance, and extending several miles back from the river; and it continues to Eutaw Spring, increasing in visible quantities and in elevation. From this place it is abundant, or easily available, on every plantation to Half-way swamp, in Orangeburgh. It is as abundant, and also rises high on the hill sides on the southern side of that stream; but disappears entirely on the northern side, (so far as known,) though the hills are as high, and there is no apparent difference in them in other respects. This remarkable and obvious difference had caused the long and yet continuing prevalent belief, that no marl existed any where above Half-way swamp. But this is a mistake; as it is seen on a southern branch of Stout's Creek, some three miles above Half-way swamp. This is the highest known exposure near the Santee.

From the lowest exposure on the river, to above Eutaw Springs, the marl is the richest known. It seems generally to be formed almost entirely of fragments of minute corals, scarcely distinguished from a homogeneous mass of close texture, except where the long exposure to rain has washed the surfrce, and made its peculiar structure and materials obvious. The usual proportions of carbonate of lime vary from eighty-six to ninety-four per cent. In some cases, as at Eutaw and Rock's Creek, the marl of this description is as white as chalk; but generally, as in the neighborhood of Lenud's Ferry, it is colored, and in some cases deeply, by ferruginous matter.

At the cliffs about Vance's Ferry, the marl loses the peculiar character just described, and becomes more clayey in appearance, and like the richest of the Ashley and Cooper. Again, at Adam Felder's, and thence to Half-way swamp, the marl is more like chalk in texture, though still of the general pale buff color.

In connexion with the Santee marls (including those of the upper branches or swamps of Cooper, which as already stated, seem alike,) there is a smaller proportion of marl-stone. This is not always richer than the softer marl, and sometimes is poorer; and

therefore the stony hardness is owing to some other cause. The marl-stone is generally highest, and in detached blocks or masses. These are often separated from each other, as well as from the marl below, by interposed red clay. Extensive observations of the hard marl-stone induced me to believe at first, that it was always above the marl, and always detached from it, even when in contact. But afterwards, at a low state of water, I found the marl-stone in some cases below the upper marl, as at Lenud's Ferry.—Also, it appears in layers passing horizontally through and connected with the marl in the cliffs above Vance's Ferry. These stony layers are there principally composed of large saddle-oyster shells, (*ostrea sellæformis*,) held together closely by a stony cement. These oyster shells are also scattered there more thinly through all the lower and softer stratum. But none of these remarkable shells were found lower on the Santee, than a few miles below Eutaw; and not one on the whole extent of the Cooper and Ashley rivers. And when these shells are left protruding from the face of the river cliffs, near Vance's Ferry, (where generally covered by the water,) by the softer marl having been gradually washed away by the river, the shells appear as if corroded and mostly dissolved, and the outside of what remains is coated with and penetrated by oxide of iron, and is as black as iron. This effect may be produced by the decomposing action of sulphate of iron, (copperas) held in solution by the river water And if so, sulphate of lime (gypsum or plaster of Paris,) is formed, and carried off dissolved by the water. The wasted appearance of the hardest marl, and even of marl-stone, below the usual level of the river, would indicate that this chemical action has been of very extensive and continued operation.

The marl of the Santee, or at least all below the neighborhood of Vance's Ferry, has a very uneven upper surface, presenting continually high rounded elevations, and deep depressions between them, both of various sizes and irregular occurrence, just as if a violent and long continued torrent of water had torn away the softer parts. Generally a fine red clay is the covering of such parts, and also forms a complete coat surrounding detached masses, whether of marl or marl-stone.

At the Rocks creek, below and near the Eutaw Springs, the upper marl and limestone are such as have been described. But at the lowest excavation, (and as low as the rising of the water permits its examination,) the marl, though still composed principally of minute fragments of coral, is very soft and loose, contains a notable quantity of green-sand, and has many of the *ostrea panda* in good preservation, a remarkable shell which I found but rarely elsewhere in South-Carolina.

At Eutaw Springs, the marl is about twenty-five feet above the level of the river at low water. At Vance's Ferry, nine miles above, (in Orangeburgh district,) it is full thirty-five feet where highest, which is somewhat back from the river. And it maintains

a height generally as much or more than twenty-five feet as far up as Half-way swamp. At the only exposure above this stream, and the highest yet known near the river, on the branch of Stout's Creek before mentioned, the marl is only about four feet above the stream. No excavation had been made to show its depth below. It there has a large and valuable proportion of green-sand. The lower stratum at Hale's old mill, is also rich in green-sand. A thin middle stratum at Dawshee cave, below Eutaw, and the upper layers of marl at the deserted site of the old Huguenot village, Jamestown, (on Col. S. J. Palmer's land,) have also green-sand in considerable proportion, though less than those marls previously named, and near the upper boundary of the bed. In sundry other specimens elsewhere, very small proportions of green-sand are discoverable.

Another striking peculiarity of the Santee marls, and especially seen more marked as descending the river, is that they are full of crevices, fissures, and even some considerable caverns are seen, and many more doubtless have existed in remote times, which no longer exist for causes to be stated. In consequence of this character, water passes freely through this marl in every direction; so that where the bed lies lower than the surface of the river, in freshets, it is impossible to dig it lower until the water subsides, as the water rises in every natural sink or excavation, as high as the then level of the river. Throughout the whole known area of the Santee marls, there are numerous circular basin-shaped depressions of all sizes, from a few yards across and very deep in proportion to their width, to some containing many acres, and so shallow that their character is scarcely noticed. All such depressions, or "sink-holes," as the deeper are called, I suppose to have been originally caused by caverns having been previously existing in the marl, or marl-stone beneath; and that by the roofs of such caverns falling in, was produced the sinking of the earth from the surface, and of the marl down to the cavern. Indeed, such sinkings of the surface occur now, and not unfrequently.

Another effect of this fissured and cavernous nature of the marl, is that the spring waters from above, and running streams, are often swallowed by some of these sinks, while many others vent bold springs, and enormous discharges of "rotten lime-stone" water, as it is termed. Thus, the existence of such sink holes, (which are also to be seen in many other parts of the lower districts, as Beaufort, Colleton and Barnwell,) or the strong boiling up of such springs, which is of still more frequent occurrence, may be safely assumed as true indications of marl or marl-stone below, though it may perhaps be at a great or even an inaccessible depth. These marl-stone fountains, when of great volume, are objects of remarkable beauty. The water is of the most perfect transparency. It is usually warmer than that of other springs and wells. The temperature of the celebrated and beautiful Eutaw Spring, I found to

be 64 degrees, (Fah.) and two marl-stone springs at the foot of the cliff at Shell Bluff on the Savannah, were respectively 66 and 68 degrees.

The cliff of marl at Vances Ferry extends about four miles down the river, and from one to two miles above. It is perpendicular, and even often overhanging the water, for its whole extent, except where a narrow edging of swamp separates, but does not hide it from the river. The general height of the face of the cliff of marl is twenty-five feet, and in some cases more. The upper and lower parts are of compact, but not very hard marl; and passing horizontally through, is a thin layer of hard marl-stone, which, like a shelf, supports not only the enormous mass of marl above, but which mass in addition is thickly covered and loaded with growing trees, many of them of considerable size, which cling to the side of the precipice by their roots running into every crevice, and whose matted fibrous roots often descend like a close veil, outside of the face of the cliff, until they dip into the water of the river below. The marl under the layer of marl-stone has been scooped out by the washing of the current, or decomposed and dissolved by the chemical action of the sulphate of iron in the water, so that the shelf and whole cliff above jut out and overhang the river often six to ten feet, and sometimes fifteen and even twenty. It is wonderful that the enormous weight, aided by the force of wind on the trees, does not frequently throw down parts of the overhanging cliff. But in viewing closely its whole extent, I saw nothing of such recent results. The steep and threatening cliff where noticed, was every where of the usual dark grey tint of a long exposed surface; and elsewhere is covered with a thick green drapery of luxuriant and beautiful creepers, and of trees, giving evidence of long undisturbed repose of the marl and the marl-stone in which they are rooted.

Marl of the Edisto River and its branches.—On the Four-Holes swamp, the principal eastern tributary of the Edisto, I was enabled to examine the marl at but two places, which are both among the highest or most northern known localities, and serve to mark part part of the general outline limiting the great deposite. From visible indications and some loose general report, I infer that marl is plentifully offered by its convenient position on this long stream. When I visited its lower and middle region, the water was too high to see any exposure, if existing; and nothing could be learned of marl by inquiring in the neighborhood on my route, because nothing seemed to have been before heard or thought on the subject.

The first of the two localities referred to, are on the lands of Mr. Thomas Zimmerman, on the eastern side of the main swamp, and about three miles from its highest source. The surface of the marl lies lower than that of the land at the edge of the swamp. The specimens obtained showed a considerable proportion of green-sand, together with the ordinary richness in carbonate

of lime. On Lime-kiln Creek, a western and upper branch of the swamp, is the other exposure of marl, well known because lime has been long burnt there, in large quantities, the business having been first commenced by Dr. Jamison, the former proprietor, and is continued by the present, Mr. John A. Tyler. The surface of the marl lies about four to seven feet below that of the low land bordering the swamp; and after removing this overlying mass, four or five feet depth of marl only was obtained, both rich and firm enough to be used for burning. Below this depth, the marl became much more loose and soft in texture, and of much darker color, as it was afterwards described to me by a person who had formerly superintended the excavations for lime-burning for several years. And from the very loose description thus obtained, I infer that the lower part which was thus left as useless, was rich in green-sand, and the whole mass very valuable and easily available for manure; which use, however, whether of the raw or burnt material, no one thought of trying, during the long time that the bed has been worked. Some very small and altogether improper applications of lime scarcely deserve to be named as exceptions to the general neglect of the marl as manure.

On Cawcaw swamp, the marl has been formerly reached at Manual Pooser's, (the highest know locality,) and at Wannamaker's a few miles lower; both near the swamp, and the marl lying low. And at both these places, the marl is overlaid by the south-eastern edge of the *infusorial bed*, which will be hereafter described.

On the South Edisto, I found marl in Barnwell, at Johnson's (or now Binnaker's) bridge; and it has been since traced to one and a half miles above. Also at Walker's bridge, near the Colleton line, and again two miles above. Thin layers of the latter exposures are of very hard marl-stone. The greater mass of all these are sandy and poor, and of very different appearance from the great body of the Carolinian bed. It seems most likely that the original upper surface of the marl along the main course of this river, has been torn up by the force of a violent current, and while so suspended, mixed with sand also suspended, and then again deposited in the form of the poorer marl now presented, and forming but the upper part of the general and richer bed below, and which probably may be found by deep digging. The borders of the lower part of this river, and of the Four-Holes swamp, where they unite, formed part of the large area which the advanced season, and its certain danger to health, prevented my examining at any time after the subsiding of the high waters, which had rendered fruitless earlier attempts at examination.

Throughout the western and central parts of Colleton, and all of Beaufort, where I crossed those two large districts twice in different routes last March, no *true* marl exposure had been heard of, except the post-pliocene, or coast marl, the existence or character of which, my visit first brought to light, and which will be described

hereafter. There were, however, three different calcareous deposites which had been long known, and were recognized as marl, without doubt. On examination, two of these were found to be the small amount of refuse lime supposed to have been thrown away from indigo vats in ancient times; and the largest, and most noted, which was at a landing place in St. Helena, seemed to be the bottom of an old heap of lime, either burnt on the spot, or brought there, and spoiled by a high tide, and abandoned and forgotten.—These deposites, and the mistakes by their proprietors as to their character, would not deserve to be mentioned here, but to guard other persons, making supposed discoveries of marl, (and also of lime-stone in the higher country,) to be less precipitate in coming to their conclusions. Sundry other deposites, mostly of the refuse lime of old indigo works, or of materials designed for such, I have since been called upon to visit, or to analyze specimens of, in other parts of the State. In every such case, an hour's work in digging and removing, and generally a few minutes, would have sufficed to show the very small quantity, if not the true character of these artificial deposites. Their quantity and extent, to be ascertained by digging and using the calcareous earth, will afford the proper and easy test of their character and value. And without this test, any one may be deceived by a mere superficial view of a few feet of exposure, and still more by a mere hand specimen.

But since interest and zeal on this subject have been awakened in these districts, several extensive and well determined bodies of good marl have been found within the region above-named, of which I can only venture to mention two, which have been sufficiently made known to me by accurate description, and the exhibition of sufficient specimens of the marls and their fossils. One is in Colleton, on Ashepoo River, three miles above sloop navigation, on the land of Frederic Fraser; and the marl of excellent quality. The other is on the land of Frederic G. Fraser, west of Hupa creek in Beaufort."

(To be continued.)

EXTRACTS FROM AN ADDRESS ON AGRICULTURE.

Pronounced before the Barbour County Agricultural Society, (Alabama,) and the public, on the Anniversary of the Society, being the Anniversary of the birth day of Washington, by JOHN L. HUNTER, *published by order of the Society.*

FELLOW CITIZENS: We are assembled to celebrate the Anniversary of the Barbour County Agricultural Society, on the very spot which but a few years since, was the residence of the Indian savage. The land around us a vast wilderness—devoted exclusively, save a few insignificant corn-patches, to his hunting grounds;

now blooming with all the beauty and loveliness of civilization and Agricultural refinement·

This rich and beautiful country, in the possession of an agricultural people, is going on to fulfil its destiny and to carry out the will of its Creator—who makes nothing in vain—mercifully consulting in all his arrangements the happiness of his creatures. * *

The farmer in our own section, in comparison with other portions of onr common country, possesses no unenviable a situation; blest as he is with a mild and genial climate, adapted to the richest staple of the world, with a rich and virgin soil, and abundant materials around him to preserve its fertility.

If the farmer would derive the greatest pleasure, as well as the greatest profit from his employment, let him use due diligence in seeking the advantages of of science. He must not only be a practical but a scientific farmer. Not that he should be a philosopher deeply versed in the sciences, but that he should be conversant with those principles that are particularly connected with his soil, its cultivation and improvement.

And this is greatly facilitated and advanced by the association of farmers, who have the pleasure of meeting together to interchange sentiments, compare notes, and explain experiments, which will have the happiest effect elicit investigation, promote an useful and honorable emulation, and arouse the talent and energy of our country. * * * * * *

Such inquiry and investigation might lead to a diversion of labor from cotton, which would diminish the amount of production and enhance the price, giving profitable employment not only to the cotton grower, but to those employed in the rich mines and quarries of the State.

Alabama important as she is in the confederacy, should not be devoid of an honorable pride and emulation, as to fall and remain in the rear of other States in the march of improvement.

Improvement of the soil is rapidly progressing—it has commenced where the land was most valuable and crowded with population; where necessity, the first law of nature, urged and stimulated its inhabitants to improvement, to avoid starvation, or an humble dependence upon other countries for the necessaries and comforts of life. In Europe, the land that produced but a few bushels, is now made to quadruple its former productions. The soil that once but sparingly sustained a small population, is now made to supply bountifully a greatly increased population. It does appear the older the land grows the greater its production. And this all the result of science, skill, and good management—says an agricultural writer, "herein consists the preeminent superiority of modern agriculture, that under the disadvantages of continued culture, the soil is thus capable of maintaining its fertility." In the old States, the planters have come to the conclusion from their

various experiments on manures, that it is easier and more profitable to improve a partially exhausted soil, than to clear and put into cultivation new land; and lands which but a few years ago were regarded as worn out and worthless, are now estimated at a high value.

Long continued cultivation, particularly in cotton, will, as experience teaches us, exhaust the richest and best soils. To preserve its fertility ought to be the earnest and active desire of every farmer who would avoid a sacrafice of his property, with all expense, inconvenience and privations of emigration. Happily for us we can now start with a soil fresh and productive, which will require less labor and expense to improve it, than to wait until it is exhausted or worn out; and we are blessed with abundant materials easily procured for that purpose. To accomplish so desirable an end, the farmer should turn his attention to a rotation of crops—resting and manuring his fields. Nature tired of one kind of growth, shows its strength and vigor in producing another kind. The soil that bore the oak and hickory, when cleared and cultivated, and then suffered to remain at rest, grows up in pines—nature teaching man a lesson for his improvement in the rotation of his crops. Too long a continuation in succession of the same plants upon a soil is said to poison it as far as that plant is concerned, by its fecal exudation, as well as its drawing from, and exhausting the soil of those grasses that the plant most particularly feeds upon or absorbs—whereas the soil would be fresh and productive for another set of plants.

It is hardly necessary here to observe, the propriety of an alternate growth of fibrous and tap-rooted plants—the former deriving their food from the surface, and the latter from a greater depth. To the former class belong our valuable Indian corn, and to the latter our cotton plant. Cotton always shows the benefit of a change from corn, and corn succeeding cotton, shows a still greater benefit, as though the land had been previously manured. In our rich bottom land repeated successions of a corn crop poisons the soil with the insect called the billbug, which saps the young and tender corn plant, and renders it difficult, and often impossible to set the crop. A change to cotton is destructive of this insect, and restores the land to its valuable property of again making an abundant yield.

To rest a partially exhausted soil, protecting it by enclosure from the grazing of animals never fails to produce the most fertilizing effects, most particularly in the culture of the cotton plant. Cotton from our constant observation and experience flourishes best upon a rested soil. It would, therefore, be greatly to the interest of the cotton planter, to divide his arable or planting land, so as to have a portion of it at rest and alternating with the balance, and ploughing in such vegetable matter, as has been accumulating on the former in time for decomposition—for if not in time, the

crude vegetable matter will produce by fermentation a vacuum and heat which will give disease to the young and tender cotton plant.

Some agricultural philosophers of the present day upon the new doctrine of the radical fecal exudation of plants would explode the necessity of rest. They contend that with a judicious rotation, and the application of manure, land wants no rest from cultivation, and will not tire or exhaust. But let it be remembered that the culture of cotton differs materially from the grain* or corn crop where that doctrine is promulgated.

The culture of cotton is one of long continuance, requiring numerous ploughings and hoeings to bring it to maturity, constantly exposing new surfaces to the action of the sun On the other hand, their grain or corn crop is generally broad-cast, and requires but little or no cultivation, after planting it to bring it to perfection. I have known a sandy soil notwithstanding a rotation from cotton to corn, become too porous for cotton from long cultivation so as to admit the sun, and excessive moisture to the roots of the cotton plant, and rest for consolidation and a closer adhesion of the particles of the soil was considered the only remedy. It may be said a loose sandy soil was not adapted to the culture of cotton, but our experience teaches us, that a rich sandy soil, is perhaps, the most suitable land for that culture.

In resting land much exhausted, it is very desirable to assist it in getting early, a vegetable coat; not only to protect it from the sun, but also, to add to its vegetable and gaseous accumulation. For this purpose, the pea plant cannot be too highly recommended. First, it is well adapted to our climate and country, and grows upon land too poor to produce any other plant to advantage. Second, it does not exhaust but enriches the soil; it has small roots and large leaves, drawing more food from the atmosphere than the soil, and affords a covering from the sun. Third, it may be sown upon the land when the planter lays by his crop, an interval between that and harvest time; and as it is of rapid growth, it has time to mature.

On the subject of manures, allow me to impress upon you the advantages of marl. You truly reside in a marl district. * *

The cotton planter has a great abundance of cotton seed, which from its oily nature, can be converted into the richest manure.

The cotton seed if suffered to be exposed to the action of the sun and rains, looses by evaporation of its gasses more than half of its value—if sheltered, would hold its germinating power, and would not only be troublesome to the growing crop, but loose much of its strength and valuable qualities. To prevent these effects, it readily occurs to the mind of an observant farmer, that it should be covered with a thick coat of lime or marl, or with a vegetable mould or earth, obtained from the branches, ponds, or low grounds, most

* In England used for wheat.

accessible and convenient, which will not only protect it from evaporation, but make important additions to it.

Professor Liebig, speaking of volatile particles of manure, in relation to stable manure, says what will with equal propriety apply to the subject under consideration: "The ammonia emitted from stables is always a combination with carbonic acid, carbonate of ammonia, and sulphate of lime, cannot be brought together as common temperatures without mutual decomposition. The ammonia enters into combination with the sulphuric acid, and the carbonic acid with the lime, forming compounds which are not volatile, and consequently destitute of all smell. Now if we strew the floors of our stables from time to time with lime, they will loose all their offensive smell, and none of the ammonia which is formed can be lost; but will be retained in a condition serviceable as manure.

"The manure," says a writer, "produced by the farmer's own stock, naturally the most valuable, is yet the most mismanaged of all the fertilizers to which he has access. This bad management has been *not* alone chargeable to modern cultivators; for from the earliest period, when man began to cultivate the earth, there is evidence that the manure of his cattle has been generally wasted, often neglected, and commonly mismanaged." Cato, the Roman, in his agricultural writings, gives admonitions to his brother farmers on this subject—he says, "study to have a large dung hill—keep your compost carefully,"—meaning, I presume that it should be protected from waste and evaporation, by the enclosure and covering.

The atmosphere abounds with the finest and richest manuring particles provided by a kind Providence in a gasseous state for the use of plants, which descend upon the earth in the way of dew and rain. "Several chemists have proved the existence of saline matters and organic substances in the air. The falling rain carries down with it salts of ammonia, of lime, and a flocky organic matter floating in the air." Some plants absorb largely their food from the atmosphere, some from the air and water, others almost exclusively from the earth, whilst all plants in general, from *all* these sources. By a wise economy of nature, plants absorb most freely those gasses that are deleterious and destructive to the health and life of man, and emit most freely those gasses that promote his health and energy. Carbonic gas derived from the atmosphere, is said to be absorbed by the leaves of plants; and nitrogen from the same source enters into the soil, and with other combinations forms ammonia, which is taken up by the roots of plants, but which is so volatile, as easily to be drawn up into the atmosphere by the operation of the sun, and dispersed by the air and wind. It should, therefore, be the study of the farmer, so to prepare and cultivate his grounds, as to preserve its attractive and retentive power for those

atmospheric gases, and to give a healthy growth and action to the plants, to attract and absorb them also.

And this can alone be effectually done by frequent working.

Some agricultural philosophers, so infatuated with the idea of atmospheric manure, seem to think but little else is required to preserve the fertility of a well constituted soil, than to keep it in a fit state to receive, absorb, and retain what gaseous matter may descend upon it. Of all plants the cotton is the most dependent for its growth and healthy action, as well as for the length, strength, and fineness of its wool, on the influence of the atmosphere. The Sea-Island cotton is well known to degenerate as you leave the sea-board, and thirty or forty miles beyond that region; although the climate and length of season may be favorable, the atmosphere will not admit of its successful cultivation, and a coarser cotton has to be substituted, commonly called upland. — * *

In just referring to atmospheric manure, brings me to speak of, and to impress on you, the advantages of fall ploughing, usually denominated flushing of land before immediately preparing it for the reception of the seed. It has, no doubt, struck your observation, as it has mine, the great benefits derived from it. It renders the land more easily managed during the growing crop, and it pulverizes clay or stiff soil, by exposing its surface to the action of the frost, which in many seasons during the crop, could not be pulverized so as to admit the setting of a crop, or the growing of the young and tender plant.

The soil as has been already observed, derives much of its productive property from the atmosphere. Constantly to expose new surfaces to the action of the atmosphere, and to keep it in a soft and spongy state, is to give it more attractive power for the gaseous matter floating in the air; and more absorbent power to retain it when dropped upon it. For instance, "much greater quantity of carbonic gas will be absorbed by a given surface of earth, if the earth is frequently stirred, than if it were to remain with a single saturated surface:" and with a hard and imporous surface, the gases would alight upon it to be extracted and taken up by the morning sun; whereas, otherwise, they would be incorporated with the earth, and form combinations to enrich it.

Fall ploughing is very serviceable in aiding the draining of clayey or stiff soils, as well as to render sandy or silecious soils subject to drought, more retentive of moisture. It renders the land less troubled with grass and noxious weeds, by more effectually burying their seeds from the action of the oxygen in the atmosphere, so essential to their power of germination. It also largely contributes to the destruction of insects. Insects more particularly, that infest cotton of late, may be attributed chiefly to the sickly or filthy condition of the plant, arising from the poverty or wetness of the soil—its exhaustion for that particular plant, by long succession of cropping, or by negligent management during the season, and the influence of

the atmosphere acting upon these causes. It is true, and experience teaches us, that a particular state of the atmosphere is more fruitful in generating insects, but experience has also shown and proven, that a soil worn out and exhausted, or badly prepared, and negligently cultivated, is at all times, and on all occasions, much more subject to be infested with them.

Upon all lands, more particularly those which have been at rest, or recently cultivated in corn, there will always be an accumulation of grasses and weeds. To turn them under by fall ploughing, allows time for their decomposition; which if neglected, until for immediate preparation for planting, such vegetable matter would not have time to rot, and in its crude state would not only be indigestible to plants, but poisonous to them. Hence the awful necessity of burning off the trash to prevent disease, more particularly to cotton. I remember noticing the great productiveness of the bottom land of a neighbouring planter on our river, and in conversation with his intelligent Overseer,* recollect his attributing his success mainly to the advantages of good fall ploughing.

Allow me to bring to your notice, some of the obstructions to the improvement of our lands. First—temporary fencing for enclosing our fields, which wastes much valuable time in repairing them and making them over—the necessity for which so often occurs, at a time when the planter should be collecting and preparing his manure, and his fields for planting. Second—planting too large a cotton crop to the hand. One acre well prepared, and skillfully and dilligently managed, will produce more than two acres otherwise. Besides, it will be more easily picked—the picker having to go over less ground, as the bolls will grow larger and thicker. With a moderate proportion of cotton in cultivation, in a fair season, the planter can produce as much cotton as he can conveniently and comfortably save and harvest, and he will be enabled to make a larger and more bountiful provision crop, to the comfort of his slaves and stock; and he will not be driven into the dead of winter, to run over his scattering cotton, when the weather is generally inclement and cold, and he can find more suitable employment of his hands to more suitable purposes. Third—the neglect of draining his lands in low places. Water may not always appear on the surface, but when not drained, if the season is not excessively dry, water will lodge under the surface destructive to vegetation, in those spots, and around them. Wet lands are unfit for cultivation, and the cotton plant particularly requires a dry soil.

Gentlemen of the Agricultural Society,—Allow me too congratulate you on the interest manifested in our community, on the important subject of Agriculture—the result of your persevering efforts—which, while they redound to your credit, will, I trust, afford the farmers and planters in our country increased means of comfort and independence.

*Mr. Crow at the plantation of Preston & Nellums.

From the Charlesion Mercury.

MR. McCARTHY'S COTTON GIN.

Edisto Island, April 15th, 1844.

GENTLEMEN,—Having been instrumental in introducing to the favorable of the public, a Cotton Gin, recently invented by Mr. McCarthy, of Alabama,* I now consider it my imperative duty to say that, *as at present constructed*, it is not adapted to the middle and finer qualities of Long Cotton. In confirmation of this, I refer you to the correspondence herewith transmitted, which, at my request, has been placed in my hands by Mr. Duncan, of Savannah. In 1842, Mr. Houldsworth, in his letter to a friend (an extract from which is given in my Historical Essay on the Cotton Plant,) acknowledging the reception of some fine Cotton, prepared by the new machine, expressly declared that, after a close *hand examination*, the staple, in his judgment, was uninjured. It now appears, that the result of a trial to convert cotton wool of a coarser texture into yarn, proves that opinion to be unfounded.

My declaration and that of Mr. Duncan's, that the Gin is capable of yielding 200 lbs. of cotton per day, was predicated on the assertion of the agent for Georgia, who, no doubt at the time, entertained that belief. It is now ascertained from an authentic source, that the greatest amount of cotton it has cleaned in a day, is 80 lbs. While for this reason it is utterly unsuited to the Short Cotton grower, it is equally true that, in all other respects, it is greatly to be preferred to Whitney's invention.

I deem it pertinent to the occasion to add, that Mr. McCarthy is represented to be an intelligent man, and a skilful and persevering artist. Having devoted a large portion of his life to effect an object of primary importance to the Plantation States, he is entirely satisfied, that he will soon be able to remove every difficulty, and to render his machine, what he originally designed it to be, highly useful, if not necessary, to the cultivators of both species of cotton grown in this country.

Very respectfully yours, &c.

WHITEMARSH B. SEABROOK.

—

Savannah, December 6th, 1842.

H. HOULDSWORTH, Esq., Manchester.

SIR,—I have read with much interest in the public prints of this country, a letter addressed by you to the Hon. Mr. Seabrook, of South-Carolina, on the subject of Sea-Island Cotton. In that letter it seems to me there is much valuable information to the Sea-Island Planter. About the time your letter appeared, a gentleman named McCarthy, visited Savannah, and exhibited a machine for ginning

* See page 105 of this Journal.

Sea-Island Cotton, which, in the opinion of most who saw its operations, seemed to be precisely the machine to accomplish the object indicated by your letter.

Under that conviction, I procured a quantity of Sea-Island Cotton in the seed, and had it ginned by Mr. McCarthy's Gin, with the view of submitting it to you for your opinion and decision.—Through our mutual friend F. A. Hamilton, Esq., I now send you as follows:—

Magnolia No. 1, one bag containing 145 lbs. of cotton ginned by McCarthy's Gin.

Magnolia No. 2, is a sample of the *same* cotton ginned by the common Roller Gin, in use here.

Magnolia No. 3, is a sample of the *stained* of the *same* cotton, ginned by McCarthy's Gin.

Magnolia No. 4, is a sample of the *same* cotton, ginned by the common Roller Gin.

Walthour No. 5, is a sample of Mr. Walthour's cotton, ginned by the common Gin used by him.

Walthour No. 6, is a sample of the same cotton, ginned by McCarthy's Gin.

Magnolia and Walthour are the product of lands forty miles apart. I would ask of you a careful examination of the different samples with your views on the same.

Mr. McCarthy's Gin is purely a Roller Gin, but the mode of operation is entirely new. The quantity that can be ginned in a day by one of those Gins is about 200 lbs., while that by one of the common Gins is about 400 lbs. This apparent loss by McCarthy's Gin is more than made up to the planter by this; that one horse will turn three of McCarthy's Gins a day, while it takes four horses to turn one of the commons Gins a day. It is further made up by this; that the cotton is in order for being packed the moment it comes from McCarthy's Gin, while after it has left the common Gin, it has to be moated by hand, at the rate of 30 or 40 lbs. per day to the hand. It seems to me that the great decrease of power necessary to move McCarthy's Gin, is in favor of the cotton—saving it from the violent action attending the great power necessary to the common Gin. Of this, however, you will be able to jndge more correctly after examination. The inventor of McCarthy's Gin, has been occupied with it for fifteen years, and it is only during the present year that he has been satisfied that he has attained perfection. The planting interest in Georgia and Carolina look to this invention with much anxiety, and not less so to the opinion which shall be expressed by you on the samples sent you. For that reason, should you honor me with a reply, I would ask the favor of you to permit its publication.

I am Sir, with great respect, your ob'dt serv't,

WILLIAM DUNCAN.

Manchester, April 22d, 1843.

To W. DUNCAN, Esq., Savannah.

SIR,—We have to apologize for having neglected to reply to your favor of the 6th of December, sooner. The appearance of your samples of cotton, cleaned by Mr. McCarthy's Gin, led us to entertain a favorable opinion of the process as applied to such cotton.—The openness and clearness adapted it at once for work, and we could not detect, upon examination by hand, any material difference in the length or strength of the staple, as compared with the sample ginned in the usual way. Experience, however, having taught us, that the only safe test of quality is in the spinning, we ordered up the packet No. 1, from Liverpool, having first requested Messrs. Percival & Parton, Cotton Brokers there, to value it.—About a month ago, we brought it through into Yarn, when we found, that although superior in clearness to the No. 2 sample, it scarcely as strong, and showed other symptoms of the staple being injured. The difference between the yarn from the two samples, was sufficient to enable us to tell in most comparisons the one from the other.

I have, therefore, no hesitation in saying, that the staple is, in *some* degree, injured by the new Gin, and that the machine would be still more injurious to a finer staple. If there is any economy in the new machine, and by its use the cottons could be better cleaned, I see no strong objection to its introduction for healthy, strong, coarse fibre; but for the middle and finer qualities, judging from our experience in this case, I should fear it would be unsuited.

As regards the stained samples, the injury to the staple is of less consequence, as such cotton is chiefly used by coarse spinners, who value cleanness more than quality of staple.

If, during the next season, you feel anxious to make another experiment, we recommend it to be upon a finer quality of cotton than Walthour. The difference of quality in the two modes of preparation would be more distinctly marked, if we are right in our present opinion, and the value of the invention be fairly tested. We have no objection to receive two bags of cotton, one ginned in the common way, and the other by McCarthy's Gin, taking them at the valuation of our Brokers, Messrs. Percival & Parton, of Liverpool, or of Messrs. Benjamin Smith & Sons, of this town, and to send you the result of the trial between them.

I am, Sir, yours respectfully,

H. HOULDSWROTH.

The last drawn milk of the cow, is always the richest in cream—hence the necessity of a careful and confidential milker.

Yeast produces fermentation in consequence of the progressive fermentation which it suffers from the action of air and water.

CULTURE AND PREPARATION OF INDIGO FOR MARKET.

On this subject, Mr. Editor, I believe no communication to the public has been made through your interesting and useful paper. The indigo is peculiarly adapted to our soil and climate, and indeed one species of it is indigenous in the Southern States. The pigment prepared from this, is believed to be of a superior quality to that obtained from the foreign plant. For domestic purposes, it has been always used by the farmers of the country, in its wild and uncultivated state. Under the Colonial Government, Indigo was extensively cultivated in South-Carolina, and was a source of wealth to the planters on the Santee, and its tributaries. Its cultivation, however, was almost entirely abandoned after the introduction of cotton; and little is now know of the mode of culture, and its preparation for market. Cotton has, at length, been pushed to the utmost extent of its productiveness; and the foreign demand for it affords to the cultivator but a small remuneration for the labor and capital employed.

The period, therefore, has arrived, when we should examine into our resources, and follow up, with renewed activity and zeal, the multiplied channels through which our industry and enterprise might successfully extend their pursuits. Let the planters of the South, in time, and before the evil day arrives, when the production of this great staple shall have overreached its consumption and demand, withdraw a portion of their active capital from its cultivation, and direct it to other objects. Happily for us, many objects of encouraging pursuits already present themselves. The manufacture of Sugar from the Cornstalk, may be considered as fully realized. The rearing of stock to an extent adequate to the home demand, has been proved, by judicious experiments, to be entirely within the power of the Southern Farmer. The fabrication of the cotton into domestic clothing, by the aid of the hand-spinning machine and the flying shuttle, may be profitably effected, without any considerable diversion of labor from the general business of the farm. Almost all the necessaries of life, and many of its luxuries, are attainable by means within the reach of every tiller of the soil, through his own resources. All these may be accomplished with few sacrifices, and at a trifling expenditure. Let the system, then, be practically carried out by all, and there will be little danger of our surplus cotton wanting a foreign market; and less ground for apprehending pecuniary embarrassments and distrers, under casual depression of prices.

The Southern Planter, who thus husbands his resources, and wisely employs all the means which the God of Nature has placed within his control, is truly the independent sovereign of all he surveys, and is more above the reach of contingencies than the monarch upon his throne.

Permit me, Mr. Editor, to call the attention of a portion at least, of the Cotton Planters, to the cultivation of the Indigo; and through your paper, to communicate such information on the subject, as I have been able to procure from the best authorities. I write not from my own experience. The directions for preparing the pigment, I obtained many years ago, from an old and respectable planter in South-Carolina. The manuscript which he delivered to me, was from the pen of one who had been extensively engaged in the cultivation and preparation of Indigo for market, before the Revolution. It has never been published, and may, therefore, impart information on a process little known by the present generation.

The pigment, or dyeing substance of the Indigo, is obtained from the leaves. There are several species of this plant. The *Indigofera tinctoria*, or French Indigo, yields the greatest quantity, and is cultivated in India; but the quality is inferior to the *Indigofera argentea*, or wild Indigo. The former is distinguished by its pinnate leaves, the smaller ribs expanding from the principal rib like the feathers of a quill, similar to the leaves of the pear, and of the lime-tree, and by a more slender, ligneous stem. It rises in a rich soil, and when well cultivated, to the height of six feet.

The seeds are sown as early in the spring as the climate and season will warrant. In the West-Indies, the planting commences in March, in trenches about a foot asunder; and the weed is cut down in May. In South America, six months elapse before it can be cut. In the former, generally four cuttings are obtained of the same plant in the course of a year; but in the latter, never more than two, and often only one. The cutting takes place when the plant is in blossom, and is done with the sickle. Fresh plantings of the seed are required yearly.

Commence the cutting of the weed in the evening, in time to have the steeper set before it is dark. The plants are laid in strata and pressed down by weights. When a sufficient quantity of them are laid, pour in water to the height of about four inches above them. One inch and a half above the surface of the water, bore a hole through the side of the vat, and directly over the trough, which is to convey the liquor into the beater. When the fermentation has commenced, the liquor will rise and run over. Let it remain until the stream has ceased, or nearly so. This in hot weather, will be from ten to fourteen hours after the water has been poured upon the weed, or on the following morning. *Immediately* draw off into the beater, and commence the agitation. Continue this for about twenty minutes, and then let in the lime-water, until you have plenty of grain, but not very coarse. The agitation must be carried on, and frequent use be made of the plate. As soon as a change in the color is perceived, from a muddy green to a purple or blue, the beating should cease. This operation usually requires an hour. There can be no certain rule as to the quantity of lime-

water to be used, or the length of time for continuing the agitation. If the Indigo be not sufficiently steeped, it will require more lime-water and longer beating, and *vice versa*. Having obtained the fine blue tint you wish, stop the agitation, and pour in an additional quantity of lime-water, which will cause the grains to collect and settle in a short time. Be careful, however, not to add so much as to give the liquor a yellow or red tinge: it should be of a clear but pale green. As the sediment subsides, commence drawing off the water through the upper plugs, and so on to each successively, until the mud alone remains at the bottom of the vat or beater. In the evening, this should be removed into the drainer, and by the morning following, it will be well drained and cracked; which it should be before it is taken out. Having first pressed out the water remaining in it, work up the mud; give it a second pressure, and work it up again until it becomes stiff. After this, submit it to a third pressure for cutting. Should your Indigo incline to mould on the drying boards, as it is apt to do in rainy or damp weather, the mould must be wiped off; otherwise it may turn to a grey color. Let it remain upon the drying boards until you plainly see the quality; afterwards it may be put up in small barrels. In continued damp weather, during the manipulating and drying process, put the greenish Indigo in the sun, and turn it frequently. As soon as it begins to crack, take it in.

Good Indigo is known by its lightness, or small specific gravity, indicating the absence of earthy impurities; by the mass not readily parting with its coloring matter, when tested by drawing a streak with it over a white surface: but above all, by the purity of the color itself. The first quality, estimated by this last test, is called in commercial language, *fine blue;* the next, *ordinary blue;* then, *fine purple*, &c. The most inferior is known as *ordinary copper*.

The Indigo of Java is superior to that of any other country. The importations into the United States, are chiefly from the British East-Indies, Manilla, the Philippine Islands, and from Columbia. —*Comm. Dict.*

McCulloch states, "that the culture of Indigo in the East is very precarious, not only as respects the growth of the plant from year to year, but also as regards the quantity and quality of the drug, which the same amount of plant will afford even in the same season." The favorableness of our climate will secure the cultivators in this country, from such losses. This is applicable to the culture of cotton; and the advantages we have in this, will place us beyond the contingencies, in respect to the Indigo, to which the Eastern countries are subject, from the peculiar character of their climate.

A SUBSCRIBER.

Claiborne, Ala. [*Southern Cultivator.*

Stains, on varnished articles, which are caused by hot water, may be removed by rubbing them with lamp oil, and then with alcohol.

CUTTING CORN-STALK FODDER.

FRIEND BATEHAM,—Among the many improvements that have been made in agricultural implements and the practice of husbandry, there is one subject which I think has not received that degree of attention which it deserves. I allude to the advantages of cutting corn-stalk fodder and the need of better machines for that purpose.

Almost every farmer raises corn, and saves the stalks for fodder, and when the amount of *waste* in the usual mode of feeding is considered, it is surprising that the advantage of cutting is not better understood by farmers, and that a more suitable cutting box has not been invented. In the ordinary mode of feeding at least one half of the stalk, that is, the nutritive part, is wasted. It is not possible for any animal to eat the coarser part unless cut up. I made a fair trial of four kinds of feed with my milch cows in the winter of forty-one. I had five loads of corn-stalks put into the barn, and with one of Gilson's cutting boxes, I cut up the stalks one inch in length; also cut up some good timothy hay one fourth inch in length. Under my shed I have feeding boxes running the whole length of the shed, made low and tight, where many cows are fed. In one of these boxes I put the stalks uncut, in an another I put stalks cut, in another I put the hay cut, and in another I put hay uncut; in order to ascertain which of the four sorts the cows would prefer. In almost every instance the cows would pitch upon the the *stalks that were cut*, and eat of them until there was nothing but a few of the coarser outside leaves, and the pieces containing the whole or a part of a joint left, and as a second choice would take the *hay uncut*. At no time did they eat of the hay cut, or stalks uncut, when the other kinds were before them, I made a number of trials, changing the four sorts around in as many ways as I could, and they invariably preferred the stalks cut up, to either of the other kinds. My stalks were sweet, and secured in good order, and not so dirty on the bottom, as is sometimes the case where they have stood upon the ground during the rains. As to the waste, I am satisfied that there was not one bushel, excepting pieces containing a joint or a part of one, which they would not eat. Those who have but little stock to winter, and a plenty of time, I would advise to cut up their stalks in a hand cutting box, but as for doing it with a large stock, it requires too much labor.

What the farmer *wants* is a machine got up as cheap as possible, having strength and durability, that can be attached to horse-power, that will cut up one or two thousand bushels in a day. Give us such a machine, and you will soon see an end to this wanton waste of *our best*, and most easily obtained fodder—by pitching out the uncut stalk upon the ground to be bit at, and then trodden under foot.

If this will be the means of others trying the experiment, and of drawing them out upon the subject, and most of all be the means, of giving us a good *cutting machine* for the purpose, I shall be satisfied.

LEDYARD.

Cayuga Co. N. Y., January, 1844.

[*New Gen. Farmer*,

CULTURE OF THE CUCUMBER.

I will state a fact relative to the planting of cucumbers, which came under my observation, and which is worthy of being known. I shall at least give a further trial myself of its reality; though I cannot conceive there is a doubt remaining on the subject. Last spring, a friend of mine and myself were planting cucumbers at the same time. I was planting mine, as is usual, in gardens, by mixing a small portion of stable manure with the earth, and raising the hill an inch or two above the surface of the ground. Observing it, he jocosely remarked, "Let me show you how to raise cucumbers." Never having much luck in raising them, I cheerfully agreed to his proposition. He commenced by making holes in the earth, at the distance intended for the hills, that would hold about a peck—he then filled them with dry leached ashes, covering the ashes with a very small quantity of earth. The seed were then on a level with the surface of the ground. I was willing to see the experiment tried, but had no expectation of any thing but a loss of seed, labor and soil. But imagine my astonishment, (notwithstanding a drier season never was known, and almost a universal failure of garden vegetables,) when I beheld vines remarkably thirfty, and as fine a crop of cucumbers as any one could wish to raise, and they continued to bear for an unusually long time. I will not philosophise on the subject—but say to all, try it; and instead of throwing your ashes away, apply it where it will be of use, and you will reap a rich reward. [*Ohio Farmer.*

Upon the foregoing, the editor of the Maine Cultivator says: "We last season made a trial of the above plan, and found it to succeed admirably.

TOBACCO AROUND PEACH TREES.

To the Editor,—I have read with interest in different numbers of the Cabinet, articles respecting the depredations of the insect *Ægeria Exitiosa*, upon the peach tree; and have seen various remedies proposed. I too, am induced to offer one, as simple, as I believe it is effectual, viz: an application of tobacco in the following manner. In the latter part of spring or early part of summer, scrape the earth from around the body of the tree, to the depth of one to three inches, being particularly careful not to injure the crown of the roots; fill the cup thus formed with trash tobacco from the shops, and envelope the boll of the tree to the height of three or four inches, with the stems or leaves. I do not offer this as a means to renovate a diseased tree, but as a preventive, the efficiency of which has been tested for nineteen years, by Samuel Wood, one of the most approved nurserymen and extensive fruit

growers, in this section of country; and also by other practical farmers with unfailing success. The efficacy of the ill weed, when applied in this manner, appears to result from its universal *nauseousness*. The place which the insect selects for depositing its eggs, is the junction of the boll of the tree with the surface of the ground, and finding there a substance which is loathsome to it, it chooses rather to wing its way to the orchard of a less provident neighbor, than consign its eggs, and consequently to trust the reproduction of its species to a tree so fortified against its attacks. I am aware that some may be prejudiced against this remedy on account of its simplicity; but it may be well to remember, that simple inventions, and simple remedies, are often the most valuable, and are besides, not always those that are the soonest discovered. Be not discouraged then, but give it a fair trial, and if you are not richly rewarded with an abundant supply of one of the most delicious gifts of Pomona, then I am a much deceived.

BUCKEYE FARMER.

Smithfield, Ohio, 2nd mo. 27th, 1844. [*Farmer's Cabinet.*

HOW TO PRESERVE THE VITALITY OF CUTTINGS FOR GRAFTING.

MR. EDITOR,—I have scored the last lines of the accompanying note from Mr. Peirce, persuaded that the hint may be useful in assisting the efforts of public benefactors in their laudible endeavors to disseminate choice fruits through the country.

Nursery at Linnæan Hill, March, 19th, 1844.

MR. J. S. SKINNER,

Dear Sir,—Mr. Callan yesterday handed me the cuttings received of Mr. Whittlesey, for which I am under great obligation to you. I regret that there seems to be but little probability that they can be resuscitated—I much fear that vitality is extinct—I have placed them under ground and shall graft them on good size stalks, so as to have fruit from them in two or three years, should they live, of which I have but little hopes. *Would it not be well to wrap cuttings in moist wrags, and then envelope the whole in gum elastic to prevent evaporation? This I think would secure easy and incommodious transportation in such cases.* Yours, &c.

JOSHUA PEIRCE.

[*Am. Farmer.*

TO PREVENT GRAPE VINES FROM BLEEDING.

Jeremiah Price, Esq. of this place informs us, that he guards against this difficulty in grape culture, by the following method.—If the vine inclines to bleed, he sharpens it where it is cut, and sticks upon it a sound potato. This, in his experience, has always proved an effectual remedy. [*Prairie Farmer.*

DURABILITY AND EXPENSE OF PLANK ROADS.

The citizens of Oswego employed J. W. Judson, Esq., U. States Engineer, sometime since, to examine and report upon the Plank Roads in use in Canada. From this report we learn, that there are two Plank Roads in use in the neighborhood of Toronto.

"One has been in use eight years, and the other seven. The plank are pine, three inches thick, sixteen feet long, and laid on four stringers of scantling, only four by six inches in size, and spiked to the same at the end of each plank. These stringers are said to be too small, although when well imbedded in the earth, they are quite sound after eight years' constant use. Col. J. states that where the bed of the road is level, the constant pressure of loaded carriages passing over the centre of the track, renders the road dishing, and collects water after rain, which softens the plank, increases the wear and tear, as well as makes them more prone to rot. To remedy this, he recommends that before the plank are laid, the road or grade be made crowning, so that the water may run off each way from the middle of the track.

Planks have been put down and tried *tranversely, diagonally, and lengthwise*, with the line of the road. The transverse mode is preferred. A plank road made of hemlock plank four inches thick, fourteen feet wide with a carriage track to turn out on each side, having five good stringers, six inches by eight, all complete, will cost about $2500 per mile. The following is the estimate of the Engineer—there are several, but this suits my idea of economy better than those that cost more or less:

The stringers must be so placed, as to be directly under the carriage wheels, giving a *continuous bearing*. These should be six inches by eight, at $4 per M. feet, board measure,	$211 26
195,680 feet plank, 4 inches thick, 14 ft. long, $4,	1,182 72
Digging trenches for stringers, putting them down, spiking plank, &c.	268 00
	$1,661 92
Contingencies, 10 per cent.	166 19
Estimate cost of superstructure,	$1,828 11
Grading, dependent on the peculiarities of surface, &c. say from $500 to $770. Total cost,	$2,500 00

A good road will last from eight to ten years, with very slight repairs. The plank should rest firmly on the earth beneath the stringers, which gives solidity to the structure and increases the weight that can be drawn on the road. A horse can draw much more on a good plank road than on any Macadamized road."

The Milwaukie Courier advocates the making of such roads from that place to several points inland. It deserves to be considered if all the considerable towns on this side of Lake Michigan, might

not be the gainers by such a communication with the interior, as these roads would furnish. No number of railroads or canals, would ever supersede such a road for a certain distance out; and the nature of the soil is such, that it is to be doubted if any other road could be made which would be tolerable for all seasons of the year. It would take a little less than 1000 feet of lumber to the rod if the plank were 16 feet in length, and the stringers four by six inches in size. [*Praire Farmer.*

ON COWS DROPPING AFTER CALVING.

As the disorder of the cow, designated puerperal fever, or dropping after calving, is still an unsettled subject as to its true nature, I trust any facts that may be gathered relative to the matter, although barren in themselves in point of elucidation, will not do any mischief by farther unsettling the affair. I do not presume any attempt at exposition: I only present to you a few simple observations.

First, the total absence of the ordinary characteristicts of fever in most cases, through every stage of the disorder.

Secondly, the very sudden development of the disease in almost every case that occurs.

Thirdly, the equally sudden recovery of the greater number of those who were diseased.

The earliest symptoms that I have noticed are a tremor of the extremities, especially the hinder ones, which rapidly increases to staggering, and ends in total paralysis—the secretions, especially that of milk, diminish in proportion as the disease progresses—the patient, when first down, perhaps supporting herself on her brisket, with her head turned to her flank and making a piteous moan at almost every expiration of breath. If this latter stage of the complaint is not quickly remedied, she soon becomes unable to maintain this position, and lies prostrate on her side; the eyes become dim —she is quite insensible to any and every object—in fact, she is universally palsied. The breathing becomes unnaturally slow, and in this condition death usually winds up the affair.

Now, sir, with regard to treatment. Viewing it as an inflammatory or febrile disorder, I first had recourse to the ordinary antiphlogistic remedies, (such as are used to check inflammation,) but where I have relied on these remedies, I have invariably been disappointed. The depletive plan, with me, has proved a total failure.

This being the case, I have many years abandoned it, and have adopted the opposite, or stimulant plan. I do, however, occasionly bleed, if I am called in the early stage, but never at an advanced period.

I also take care to administer some purgative early in my attendance, but place no reliance on it without a stimulant being addded.

I think, as a purgative, croton and aloes have the preference in this case with me, and, as a stimulant, large doses of spt. nit. aeth., with about two ounces of tinct. opii. A variety of other stimulants may, however, be used, either separately or combined, with equally beneficial results; I also usually rub a stimulating embrocation well into the back and loins, and apply a sheepskin over all. I think a turpentine clyster also of much service.

Many patients under this plan of treatment, will be on their legs in from twelve to twenty-four hours from the administration of the first dose; and no fear need be entertained for their safety when once they can stand.

I scarcely dare venture any remarks as to the nature of this affection, and the post-mortem examinations have not been attended with uniform results; but that it is a nervous disorder, I think most practitioners will admit. It also seems peculiar to the cow, and likewise to the period of parturition.—*J. Beeson, Veterinary Surgeon, (Eng.)*

REMEDY FOR HOLLOW HORN.

A correspondent of the Prairie Farmer says:—"For about 30 years my father kept a dairy of from 20 to 40 cows, in the city of New-York. For the hollow horn, we always used from one to two table spoonsful of spirits of turpentine, poured into the hollow on top of the head, between the horns; and cutting off enough of the end of the tail to bleed, which may be done by turning the long hair upwards and cutting off a quarter of an inch or less. I have known some persons to split the tail, put in salt and bind it up.—All the good effected is by bleeding—therefore, the less wound the better.

I never knew my father to bore the horns until he had first tried the spirits of turpentine and bleeding; if this failed, he bored the horns on the under side only—never on the top, except when the holes on the under side could not be kept from closing up with matter. I have heard him say he never lost but one cow with the hollow horn, whilst his neighbors who were engaged in the same business, lost many. His rule was, and my practice has been, when a cow was observed with a sunken eye and a dry nose, (which are the sure signs of the hollow horn,) to put on spirits of turpentine and bleed at the tail, and have had unvaried success."

CURE FOR SWINEY.

Take 3 ounces of rusty bacon, fry it over a slow fire till brown; take out the cracklings, and when milk warm add the yolks of 3 eggs, and a tablespoonful of turpentine; stir all together—apply one tablespoonful to the shoulder by rubbing well, and take a piece of cloth several folds thick, lay on the affected part, and with a hot iron bathe the shoulder once a day. [*Southern Cultivator.*

EFFECTS OF DEEPENING THE SOIL.

The Liverpool Times gives the following fact, illustrating the beneficial effects of loosening the soil to a considerable depth :—

"On Saturday last, there were exhibited in the Exchange News Room, two enormous specimens of the red beet, or mangel wurtzel, grown by Mr. Robert Neilson, in a field on his farm at Halewood. Each of them weighed upwards of twenty pounds. They were not merely curiosities in themselves, but remarkable proofs of the effects which may be produced on vegetation by the deepening of the soil, for the ground which produced these gigantic roots, would certainly have produced double the quantity of potatoes, or of turnips, or of ordinary sized beets, usually grown on an equal extent of land. They show that by deepening the soil, an amount of produce may be got from it much greater than any one has yet thought it possible to raise."

THE OAK—CURIOUS EXPERIMENT.

Take an acorn in the fall of the year, tie a string round it in such a way, that when suspended, the blunt end of the acorn where the cup was is upwards. Hang it thus prepared in the inside of a bottle, or hyacinth glass, containing a little water, taking care that the acorn does not reach the water within an inch ; wrap the bottle all over in flannel, so as to keep it dark and warm, and put it in a warm place. In three or four weeks the acorn will have swollen, its coat will have burst, and a little white point will make its appearance at the end opposite the water. This point is the root ; the acorn is now changing its nature and becoming an oak ; still, however, it must be stationed in the dark, still it must be kept clear of the water, and so it must continue till the young root is at least half an inch long.

Then the water may be allowed to raise higher ; but it is only when from the neck or the root, a little point begins to turn upwards, that it is safe to allow the water to touch it. At this time, the acorn has ceased to be an acorn, and has really become a young oak ; for the little point directing itself upwards, is the beginning of that trunk which a century later, may form the timber of a frigate. As soon as the young stem begins to shoot, the oak will require a dose of light, a little every day; and it also yearns for more food so that its root, which in reality is its mouth, must be allowed to touch the water, and to drink it.

After these events have come to pass, the little creature breathes and must have air; digests, and must have light ; sucks greedily, and must have fresh water given to its root, which, however, should never be permitted to be wholly covered, just that point where the stem begins should always be kept out of the water. The pet

having been brought to this, its first state of existence, must be put in the window. At first it will be a stout thread, whitish, and covered with tiny scales; then the scales will expand a little, and the end will become greener.

Next will appear some little leaves; hair will begin to grow, veins will branch; the old scales will fall off, and by slow degrees the leaves will arrange themselves upon the stem, each unfolding from the bosom of the other. And thus, out of a little starch and gum, for the acorn was not much more, manifold parts will be curiously produced by the wondrous creative powers of nature.

[*Gardener's Chronicle.*

MOUSSELINE DE LAINES.

MR. FLEET,—Knowing that you take a particular interest in home industry and manufactures, I have no doubt that you will be pleased to hear of the manufacture of Mousseline de Laines, in this country. I send you the following taken from the American Traveller. It cannot fail of being interesting to your female readers especially.

"The other day we made a passing call on Mr. John Marland, Ballard Vale, Andover, and speaking of the success in the manufacture of Mousseline de Laines in this country, he said his daughter's dress was of his own manufacture.

This was the most beautiful de Laine dress we ever saw—the figure was in good taste, distinct and elegant, the colors, bright and fast, and the fabric itself light, fine, smooth and strong.

This article has been declared by experienced dealers, to be superior to any imported article of the kind. The original pattern had not been in the country ten days, when its successful American competitor appeared in the market at the extremely low price of about thirty cents a yard. This is certainly very complimentary to the skill and enterprise of Messrs. Marlands, who introduced this branch of manufactures into the country.

We understand, that about 5,000,000 yards of this article, will be produced next year, increasingly largely the demand for wool of a long smooth staple, such as the Leicester or Dishley, which we recommended as worthy the attention of the people of Nantucket.

This wool, or that of the old fashioned long wooled common sheep, is more valuable for this purpose than any of the grade wools, and must now be worthy of the consideration of woolgrowers.

Every lady possessed of truly American and patriotic feelings, may, nay, *should feel* proud to be clad in this elegant article of American manufacture. It is a rich affair, truly."

[*N. Y. Far. & Mechanic.*

MANUFACTURE.

A company has been formed in this city, with a capital of one million of dollars, and have purchased a privilege which in the course of another year, will set in motion two millss of 1500 spindles each, to manufacture De Laines, &c. [*Boston Post.*

IMPORTATIONS—BUSINESS.

The following immense amount of duties collected in the city of New-York, affords some idea of the extent of business anticipated the coming season. The only fear is that there be an excess of importations, followed by an exportation of silver and gold, and bringing again into discredit our monied institutions, and thus deranging again the state of exchanges and business. It must be recollected that this country is greatly indebted to European capitalists, and that the least excess of importations will be productive of much injury. By fostering our own manufactures we avoid these dangers.

1843—Quarter ending	March 31,	$1,940,000
" "	June 30,	2,570,000
" "	Sept. 30,	4,450,000
" "	Dec. 30,	2,500,000
1844—January 1st to 31st inclusive,		1,870,000

Rents are advancing, and there are many other pleasing indications of a revival of business. Economy and prudence will have their reward. [*New-York Farmer and Mechanic.*

WATER POWER vs. STEAM.

From a recent report we gather some interesting facts in relation to the advantages which water power is said to have over steam. It states "the high pressure engines used in this country, according to the best standard of calculation, require about two bushels of coal, or one-eighth of a cord of wood, for each horse power per day of twelve hours; which for 2740 horse power, consumes 5480 bushels of coal, or 342 cords of wood. Estimating the coal at eight cents per bushel, and the wood at two dollars per cord, the cost of the coal would be $438 40 per day, or $131,520 for 300 days; and the cost of the wood would be $684 per day, and $205,200 per year of 300 working days. To this must be added the interest on the cost of the engines, wear and tear, etc. and the expense of keeping them running; amounting to about thirty three per cent. more per annum; which exhibits in a striking point of view, the superior cheapness and advantage of water power. [*ibid.*

PEAT ASHES.

MESSRS. EDITORS.—I see a great deal said in your papers respecting fruit trees, and the *worms* that destroy them. I find that one man recommends turning sheep into the orchard; but as I have had some experience in this business, I do not hesitate in expressing my disapprobation of this plan, for I have known my sheep to eat the bark of the young trees so as to greatly injure, if not entirely spoil them. But, I will prescribe a cheap, but positive remedy which, if you will publish it, possibly may be of some consequence to the readers of your paper.

Put *one quart of peat ashes* at the roots of each tree, at the last of April or the first of May, and continue to do this once in three or four days for a few weeks, and you will be troubled no more by having your trees eaten by worms. Few people are aware of the many virtues that peat ashes possess. I have had the means of knowing their worth, as I cut annually from two to three hundred cords of peat for myself and neighbors. You will therefore permit me to state a few facts for publication.

On rod of peat ground is worth two dollars, and there can be cut from it three cords of peat, which will sell readily for four dollars per cord. The three cords of peat will produce one hundred bushels of ashes. These ashes being spread on mowing land will produce more grass than twice than quantity of any other manure.—They are of great value to spread on low land when it is too moist for ploughing. These are facts which I know from many years' experience. I own about twenty acres of peat meadow which I prize more highly than I do the same quantity of upland. Hoping these statements may be of some service to farmers and owners of peat, I readily submit them to the press.

Respectfully yours, ALBERT NELSON.

Georgetown, March 22. 1844. [*Boston Cultivator.*

LIME FOR PLUM TREES.

MESSRS. EDITORS,—The late discussion at an agricultural meeting in your State House, concerning the efficacy of salt in preventing the attacks of the Curculio upon plum trees, has reminded me of a few experiments, which I have recently made on this subject. These experiments have not been sufficiently numerous to justify a general conclusion; but I should like to know if others have obtained similar results.

Previous to 1841, several of my plum trees had been so attacked by this insect, that I scarcely obtained a ripe plum. Early in the spring of that year, as soon as the blossom buds began to swell, I removed the soil around the tree to the depth of two or three inches, and as far on all sides as the limbs extended. I then deposited in the opening a layer of lime, recently slack and still warm, about

a half an inch in thickness. The soil was immediately restored to its place over the lime, and closely pressed down upon it. I had an abundant crop of well ripened plums. In the spring of 1842, I again applied lime in a similar manner, and with the same success.

In the autumn of that year, it was stated in some Agricultural Journal, that salt sprinkled around the tree in sufficient quantities to render the ground *whitish*, would prevent the ravages of the Curculio. In 1843, I made the experiment. The trees blossomed well, and showed an abundance of fruit; but every plum was attacked by this insect and fell to the ground.

I intend to apply the lime again the present spring; and if I obtain a good crop of plums, my confidence in this remedy will be strong. Yours, respectfully, P. C.

Brunswick, Me, March 24, 1844.

Editorial Remarks.—The above experiments of Professor Cleveland, of Bowdoin College, may prove to be valuable to horticulturists, in enabling them to guard against the most formidable enemy of a valuable and delicious fruit. We hope that others will try the experiment, and we shall be pleased to learn the result.

It is a pleasing consideration to cultivators, that those gentlemen who are distinguished, not only in our own but foreign countries, for their deep researches and attainments in those sciences, that are intimately connected with agriculture, and its kindred branches, are directing their attention to agricultural improvements, and thus applying science to the most useful practical purposes. Every operation in nature, by which the farmer produces his crops, and rears and fattens his animals, is strictly in accordance with the natural sciences, and the more these sciences are understood by cultivators, the lighter will be their labors, and the greater their success. [*Boston Cultivator.*

WASH FOR FRUIT TREES.

Messrs. Editors,—I have been engaged in rearing fruit trees for several years past, and have made use of different kinds of wash for my trees, but I have never found any equal to that which I used the last year. It gives smoothness to the bark, adheres to the trees the best, and is the best for healing wounds in the trees, of any thing that I have ever used; and I have been requested by a former agent of yours, to make it known to the public through your paper.

For half a barrel of wash, I take half a peck of quick lime and slack it, and to it add one quart of salt; I then take equal quantities of clay and cow-dung, enough to fill the cask nearly full when made into the consistency of a thick paste. I then make a thick paste of rye meal and mix it with the above mixture, and lay it on with a stiff brush. S. Parker.

Southboro', March 25, 1844.

Editorial Remarks.—Washes of various kinds are good for fruit trees, for the purpose of destroying insects, keeping the bark smooth and in a thrifty state, and as the liquid washes run down to the roots, they form an excellent manure; and those formed into a composition by mixing them with firmer substances, become gradually dissolved and run down to the roots, serving also as manure.

Potash water makes a good wash for the destruction of insects, and the growth of trees. One pound of potash is sufficient for a pailful of water. Some have used one pound to a gallon of water, and have nearly killed their trees, so that they have sent up numerous suckers. Others say that they have used a wash of this strength without injury. Much depends on circumstances. Some lots of potash are stronger than others; and some persons apply more than others.

Printers, in washing ink from their type, which is a thick substance made of tar, oil, lampblack, &c., use a ley made with one pound of potash to a pailful of water, and it is very strong, else it would not answer their purpose. It would soon eat the skin from their hands when washed in it, if they did not rinse them immediately in water.

Soap suds are a good wash for trees; as they are not very strong, it is best to apply them frequently. They are an excellent manure. A ley of wood ashes may be used instead of potash water, as it has the same properties. Some put a coat of whitewash on trees, which is generally considered injurious, as it stops the pores in the bark. [*Boston Cultivator.*

PORT WINE.

As the consumption of wine has evidently decreased, it probably is not of much consequence to inquire into its component parts. Dr. Tracey, in one of his lectures, said that in one year, the quantity of Port wine imported in Guernsey from Oporto, was 135 pipes and 20 hogsheads, and in the same year there were landed in the London docks alone, from Guernsey, 2545 pipes and 162 hogsheads. Some years no wine is imported into Guernsey, and yet hundreds of pipes are shipped thence to London. The Doctor read a receipt for making Port wine, which comprised red beet root, brandy, sugar, logwood, rhatny root, &c., and related an anecdote of a carpet manufacturer, who, on hearing the list read, exclaimed—"Oh, now I understand why, when I have gone to the docks to purchase logwood, I have always found one of the principal wine merchants there, picking out all the choice pieces."—Immense quantities of logwood, likewise, are imported into Marseilles.

Never entrust the care of your cattle and horses, to a person of ugly temper.